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2 CLAIMS

3 I claim:

4 1. A multimode communication system for location independent communications

5 comprising at least one personal communication device (PCD) comprising:

6 integrated components for producing and receiving a wireless signal;

7 a speaker;

8 a microphone;

9 a transceiver for transmitting and receiving information;

10 a microprocessor and memory for processing information;

11 a battery for power;

12 and a means of data entry;

13 the at least one PCD having a display and being capable of communicating with at least

14 one multiplexing communication device (MCD) comprising:

15 at least one transceiver for communicating with the at least one personal communication

16 device;

17 at least one connection to external communications systems;

18 a call routing server managing communications with the at least one personal

19 communication device and the at least one connection to an external communication

20 system;

21 wherein the system can transmit and receive communication via at least one external

22 communications systems thereby providing a location independent personal

23 telecommunications system.

- 1
- 2 2. The system according to claim 1 wherein the at least one transceiver is a radio
- 3 frequency transceiver.
- 4
- 5 3. The system according to claim 1 wherein the at least one transceiver is an optical
- 6 transceiver.
- 7
- 8 4. The system according to claim 3 wherein the at least one optical transceiver operates
- 9 on infrared frequencies.
- 10
- 11 5. The system according to claim 1 wherein the means of data entry further includes a
- 12 keypad.
- 13
- 14 6. The system according to claim 1 wherein the means of data entry further includes a
- 15 voice activated system.
- 16
- 17 7. The system according to claim 1 wherein the at least one MCD provides voice
- 18 telephony over a wireless computer network.
- 19
- 20 8. The system according to claim 7 wherein the at least one MCD provides Voice Over IP
- 21 communications over a wireless computer network using IEEE 802.11b protocol.
- 22

1 9. The system according to claim 1 wherein the at least one PCD further includes a  
2 personal digital assistant.  
3

4 10. The system according to claim 9 wherein the personal digital assistant further  
5 includes an address book wherein entries in the address book can be speed dialed.  
6

7 11. The system according to claim 1 wherein the at least one PCD further includes a  
8 personal information manager for securely storing and transmitting personal information.  
9

10 12. The system according to claim 11, wherein the personal information is at least one  
11 public key for asymmetric digital voice and data encryption.  
12

13 13. The system according to claim 11 wherein the personal information manager  
14 comprises:  
15

16 a memory for storing personal data;  
17

18 a program for managing the personal data and transmitting the personal data.  
19

20 14. The system according to claim 1 wherein the at least one PCD further includes a  
21 secure user identification system for allowing multiple users to access the same PCD.  
22

23 15. The system according to claim 14 wherein the secure user identification system is  
biometric.

1 16. The system according to claim 15 wherein the biometric user identification system is  
2 selected from the group consisting of voice-based identification, fingerprint-based  
3 identification, and combinations thereof.

4  
5 17. The system according to claim 14 wherein the system indicates the called user's  
6 telephone identification.

7  
8 18. The system according to claim 1 wherein the at least one PCD further includes a  
9 telephone.

10  
11 19. The system according to claim 18 wherein the telephone is a cordless telephone.

12  
13 20. The system according to claim 18 wherein the telephone is a wireless telephone.

14  
15 21. The system according to claim 20 wherein the wireless telephone is a digital cellular  
16 telephone.

17  
18 22. The system according to claim 18 wherein the telephone is a voice over IP device.

19  
20 23. The system according to claim 1 wherein the memory is at least eight megabytes  
21 large.

22  
23 24. The system according to claim 1 wherein the memory is user expandable.

1

2 25. The system according to claim 1 wherein the at least one MCD selects which at least  
3 one connection to external communications systems will be used for a given call.

4

5 26. The system according to claim 25 wherein the at least one MCD selects the  
6 connection based on cost of service.

7

8 27. The system according to claim 25 wherein the at least one MCD selects the  
9 connection based on current percentage usage of maximal capacity of each at least one  
10 connection.

11

12 28. The system according to claim 25 wherein the at least one MCD selects the  
13 connection based on the range of the call.

14

15 29. The system according to claim 25 wherein the at least one MCD selects the  
16 connection based on the identity of the user of the PCD from which the call is placed.

17

18 30. The system according to claim 1 wherein the at least one MCD is a multiplexing  
19 server.

20

21 31. The system according to claim 1 wherein the at least one MCD further includes a  
22 softPBX server.

23

1 32. The system according to claim 31 wherein the softPBX Server operates on radio  
2 frequencies and uses the IEEE 802.11b protocol.

3  
4 33. The system according to claim 31 wherein the softPBX Server is capable of  
5 transmitting between about 7 and 22 Megabits per second.

6  
7 34. The system according to claim 31 wherein the softPBXServer's PCD capacity is  
8 limited only by limitations of the microprocessor and memory.

9  
10 35. The system according to claim 31 wherein the softPBX Server is capable of  
11 identifying a called user by telephone number and user ID.

12  
13 36. The system according to claim 31 wherein the softPBX Server can provide  
14 communication features selected from the group consisting of caller ID, voice mail, call  
15 forwarding, call hold, hold music, directory assistance, paging, speed dialing, and  
16 combinations thereof.

17  
18 37. The system according to claim 1 wherein the system is capable of providing peer to  
19 peer communication between at least two of the at the least one PCDs.

20  
21 38. The system according to claim 37 wherein the peer to peer communication is capable  
22 of occurring directly between at least two of the at least one PCDs.

39. The system according to claim 38 wherein the direct peer to peer communication is referenced by the names of the users of at least two of the at least one PCDs.

40. The system according to claim 1 wherein the at least one MCDs are located in office and residential sites and foreign sites.

41. The system according to claim 1 wherein each of the at least one MCD detects the at least one PCDs in close proximity, transmits the location of each the at least one PCDs to the primary MCD with which each PCD is associated, and the primary MCD for each PCD forwards calls intended for the user of each PCD to the MCD in closest proximity to each PCD.

42. The system according to claim 41 wherein the detection of PCDs and transmission of the location of each PCD to the primary MCD for each PCD is automatic.

43. The system according to claim 41 wherein call forwarding is automatic.

44. The system according to claim 43 wherein automatic call forwarding can be overridden by the user of each PCD.

45. The system according the claim 43, wherein the automatic call forwarding is selective and predetermined.

1 46. The system according to claim 45, wherein the selective, predetermined, automatic  
2 call forwarding is based on criteria selected from the group consisting of user location,  
3 time, date, user call routing preferences, and combinations thereof.

4  
5 47. The system according to claim 1 wherein the at least one MCD further includes a  
6 wireless Internet Protocol (IP) hub running a communications Internet Protocol.

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8 48. The system according to claim 47 wherein the wireless IP hub uses a protocol selected  
9 from the group consisting of Bluetooth and IEEE 802.11b.

10  
11 49. The system according to claim 1 wherein the at least one connection external  
12 communications systems includes a connection to a landline telephone system.

13  
14 50. The system according to claim 1 wherein the at least one connection to external  
15 communications systems includes a connection to a computer network.

16  
17 51. The system according to claim 1, further including a means for encrypting the  
18 transmitted voice.

19  
20 52. The system according to claim 51, wherein the encrypting means uses asymmetric  
21 encryption.



1 53. The system according to claim 1, wherein the at least one user can have at least one  
2 user ID.

3  
4 54. The system according to claim 53, wherein each at least one user ID is associated  
5 with a different set of call routing preferences.

6  
7 55. The system according to claim 54, wherein the multiple user IDs are used to provide  
8 selective, predetermined, automatic call forwarding.

9  
10 56. The system according to claim 53 wherein the active user ID is automatically selected  
11 based on the location of the user.

12  
13 57. A method for multimode personal communication, including the steps of  
14 providing a multiplexing server with landline telephone connections and computer  
15 network connections;  
16 providing a personal communications device that communicates with the multiplexing  
17 server via wireless and wired communications media;  
18 and transmitting communication received and initiated by the system over the landline  
19 and computer network connections thereby providing a location independent  
20 telecommunications system.

21  
22 58. The method according to claim 57 further including the steps of  
23 detecting the PCD's in close proximity to an MCD;

1 transmitting the location of the PCD's in close proximity to an MCD to the primary MCD  
2 for each PCD;  
3 forwarding the calls intended for the user of each PCD to the PCD of each user.  
4

5 59. The method according to claim 58, further including the step of selective,  
6 predetermined, automatic call forwarding.  
7

8 60. The method according to claim 59, wherein the selective, predetermined, automatic  
9 call forwarding is based on criteria selected from the group consisting of user location,  
10 time, date, and combinations thereof.  
11

12 61. The method according to claim 57, further including the step of asymmetric  
13 encryption of the transmitted voice using the public/private key encryption method.  
14

15 62. The method according to claim 57, further including the step of communicating the  
16 called ID.  
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